

REMARKS/ARGUMENTS

The foregoing amendment is presented in order to place the application in condition for allowance, or alternatively, in better condition for appeal.

The claims in the case are 1, 4 to 7, 11, 12 and 14 to 20. Claim 1 has been amended to include the subject matter of original Claims 2 and 3 and the feature of ball milling disclosed on page 5. In addition, the feature of the DBP from page 2 of the application has also been incorporated into Claim 1. No new matter is presented. Claim 7 has been amended to be consistent therewith and to incorporate the feature of Claim 8.

It is noted that the rejection of Claim 6 under 35 U.S.C. § 101 and 35 U.S.C. § 112 has been withdrawn.

The provisional rejection of Claims 1 and 7 on the ground of non-statutory obviousness type double-patenting in view of Claims 1 and 4 to 9 of the co-pending application 10/532,202 will be overcome by the terminal disclaimer filed herewith. The rejection with respect to Claim 8 is moot with the cancellation of that claim.

The rejection of Claims 1, 4, 7, 11, 12 and 14 to 16 under 35 U.S.C. § 102(b) as anticipated *Deller et al.*, U.S. 5,776,240, is traversed and reconsideration is respectfully requested. The *Deller* patent is assigned to the same assignee as the present application. The rejection with respect to Claims 2, 3, 8-10, 13 and 15 is moot due to cancellation of those claims.

Attention is invited to the express limitation in Claim 1 of this application that the pyrogenically produced silica is "structurally modified." This terminology has a specific

meaning in the art which is that the silica has been subjected to ball milling or equivalent means of structurally impacting the pyrogenically produced silica. This is mentioned on page 5, beginning at line 23 of the application. This feature is now present in Claim 1 and is totally lacking in the *Deller* patent which merely shows granules of silica which have been prepared by dispersing silica in water, spray drying and then optionally heating and/or silanizing. See the Abstract. The particles typically have an average particle size of 10 to 120 microns and are used for catalyst supports, according to *Deller*. Among the silanizing agents are compounds such as those mentioned in the present application.

The process of *Deller* actually works in a way that leads in a direction opposite to what is produced by applicants. That is, *Deller* intends to make larger particles from smaller ones which larger particles would then have a higher bulk density and can be used without producing significant dust.

Applicants' process goes through ball milling to miniaturize the silica particles by destroying the aggregates of the primary particles. Thus, *Deller* teaches away from the present invention because he makes larger particles from smaller ones.

For a discussion of destructuring and how it comes about to produce a structurally modified metallic oxide filler which is distinctly different from a filler that has not been destructured, see *Nargiello, et al.*, U.S. 6,193,795, of record. See also U.S. 2002/0077388, U.S. 5,959,005 and U.S. 5,827,363 which are further evidence of the well-recognized meaning of structural modification in silica technology.

Since there is no disclosure of the structurally modified silicas in *Deller*, applicants respectfully submit that the reference fails as a reference under 35 U.S.C. § 102(b) because the reference does not show each and every feature of the claimed invention which is required in order to sustain a rejection under 35 U.S.C. § 102(b) provision of the U.S. patent law.

Claim 1 now specifies that the silica has been structurally modified by ball milling and possesses a DBP value at least 10% lower than a non-structurally modified silica.

Clearly, *Deller* does not anticipate the claimed invention.

Therefore, withdrawal of the rejection under 35 U.S.C. § 102(b) is respectfully requested.

The rejection of Claims 1, 4, 7 and 11 under 35 U.S.C. § 102(b) as anticipated by *Ettlinger et al.*, U.S. patent 5,665,156 is traversed and reconsideration is respectfully requested. The rejection of Claims 2, 3, 8, 9 and 10 has been rendered moot by the cancellation of these claims. *Ettlinger*, assigned to the same assignee as the present application, describes silanized, pyrogenically prepared silicas by spraying the silica first with water and then with a silane compound which typically has the formula $(\text{RO})_3\text{SiC}_n\text{H}_{2n+1}$ in which n is from 10 to 18 and R is alkyl. *Ettlinger* shows that these products are used as thickening agents in liquids, as agents for improving pourability and also as reinforcing agents. See col. 1, lines 9 and 10 as well as col. 3, lines 13 to 19.

However, *Ettlinger* does not disclose structurally modified silicas and, more particularly, structurally modified silicas in lacquers. These silicas can be used as thickening agents in liquids, such as water dilutable paints (see col. 3, lines 4-6).

This thickening effect is based on the characteristic feature of the fumed silica that it agglomerates to larger clusters due to its agglomerated structure having gaps in the clusters.

It is noted that *Ettlinger* is mentioned in applicants' international publication (WO 2004/020531) on pg. 1, lines 8 to 22 and on pg. 11, lines 4-5 as the European equivalent EP 0 672 731.

The difference between the silicas according to *Ettlinger* (U.S. 5,665,156) and the silicas according to the inventions is that the silicas according to the invention are structurally modified after the silanization.

From the example beginning on page 11 of applicants' specification (WO 2004/020531) one can see that the silica according to the invention shows no thickening effect but gives a good scratch resistance to lacquer coatings.

In the comparative examples shown in WO 2004/020531, silicas according to the *Ettlinger* are used.

From the table 7 on page 17, one can see that the silica according to *Ettlinger* (comparative silicas 1 and 2) show a good thickening effect, but a low value for the scratch resistance.

In contrast to that the silicas according to the present invention show a low thickening effect, but a good result for the scratch resistance. The difference could not have been predicted. Accordingly, the reference fails to anticipate the claims and, therefore, the rejection should be withdrawn.

It is noted that the rejection of Claims 1, 3, 7 and 17 to 20 under 35 U.S.C. § 102(b) as anticipated by *Bock et al.*, U.S. patent 6,020,419, has been withdrawn.

The rejection of Claims 1, 4-7, 11, 12 and 14 to 20 under 35 U.S.C. § 103(a) in view of *Deller* or *Ettlinger*, both of record, taken with *Nargiello*, newly cited, U.S. 6,193,795, is traversed and reconsideration is respectfully requested.

Both *Deller* and *Ettlinger* are discussed above and the remarks apply here as well.

The Examiner notes that neither *Deller* nor *Ettlinger* disclose that the respective silanised pyrogenically produced silicas are "structurally modified".

Nargiello discloses, in col. 6, lines 1-3, that the method of that document pertains to destructuring of pyrogenic hydrophilic/hydrophobic metal oxides with certain physical-chemical properties.

In respect to the hydrophobizing agents, *Nargiello* refers to four U.S. patents (see col. 6, lines 23 to 28). These U.S. patents disclose the hydrophobizing agents as follows: U.S. 4,307,023 (*Ettlinger*) uses silicon oil, only (see col. 10, Claim 2). According to the present invention, no silicon oil is used or claimed.

U.S. 3,924,029 (*Schütte*) uses organohalosilane which is a mixture comprising monomethylchlorosilane, dimethylchlorosilane and trimethylchlorosilane (see col. 10, Claim 4).

According to the present invention these silanes are not claimed.

U.S. 4,503,092 (*Klebe*) uses dimethyldichlorosilane only (see col. 4, Claim 2).

According to the present invention, this silane is not claimed.

U.S. 4,326,852 (*Kratel*) does not disclose any hydrophobic silica.

Thus, even if *Nargiello* were to be combined with the principal references the combination would not create *prima facie* obviousness.

Favorable action at the Examiner's earliest convenience is respectfully requested.

Respectfully submitted,

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